

## CLAIMS

What is claimed as being new and desired to be protected by LETTERS PATENT of the United States is as follows:

1. A new and improved trash can and closure system for ensuring a secure rotational coupling between a trash can and its lid through a 90 degree turn comprising, in combination:

a trash can having a closed horizontal circular bottom with a first diameter of about 16.6 inches and an open horizontal circular top with of a second diameter of about 19.5 inches and greater than the first diameter and with a generally frusto conical side wall there between and a central vertical axis, the side wall having a generally cylindrical upper extent extending downwardly from the top for about 3 inches;

a pair of diametrically opposed handles extending outwardly from the side wall slightly beneath the cylindrical portion;

a pair of similarly configured threads formed in the cylindrical portion with each of the threads extending for about 180 degrees and each having an input point and an output point vertically spaced with respect to each other and the axis by a distance of about two inches with the input point of each thread end spaced immediately above the output end of the other thread and with each thread angled between about 2.5 degrees and 4.5 degrees, preferably 3.6 degrees, with respect to a horizontal plane extending perpendicularly through the axis, each thread having a generally trapezoidal cross sectional configuration with

its angled sides disposed one above the other and at an angle between about 15 degrees and 21 degrees, preferably about 18 degrees, from the plane, each thread of the trash can is preferably about 1 inch deep and about 1 inch in height at its largest extent;

a lid having a horizontal circular plate and with a generally cylindrical side wall extending downwardly from the periphery of the plate for about 3 inches, each thread of the lid is preferably about 1 inch deep and about 1 inch in height at its largest extent;

a lifting handle extending upwardly from adjacent to the center of the plate with a center aligned with the axis;

a pair of similarly configured threads extending for about 180 degrees and each formed in the cylindrical portion with each of the threads having an input point and an output point vertically spaced with respect to each other and the axis by a distance of about two inches with the input point of each thread end spaced immediately beneath the output end of the other thread and with each thread angled between about 2.5 degrees and 4.5 degrees, preferably 3.6 degrees, with respect to a horizontal plane extending perpendicularly through the axis, each thread having a generally trapezoidal cross sectional configuration with its angled sides disposed one above the other and at angle between about 15 degrees and 21 degrees, preferably about 18 degrees, from the plane, the trash can including its threads and

the lid including its threads being fabricated of generally rigid plastic selected from the class of generally plastic rigid plastics including polyvinyl chloride, and polyethylene with a common thickness between about 0.060 inches and 0.100 inches, preferably about 0.080 inches, throughout the entire extent.

2. A new and improved closure system for ensuring a secure rotational coupling between a container and its lid through a turn comprising:

a container having a closed circular bottom with a first diameter and an open circular top with a second diameter greater than the first diameter and with a side wall there between and a central axis, the side wall having an upper extent extending downwardly from the top;

a pair of threads formed in the upper extent with each of the threads having an input point and an output point spaced with respect to each other;

a lid having a circular plate and with a side wall extending downwardly from the periphery of the plate;

a lifting handle extending upwardly adjacent to the center of the plate;

a pair threads formed in the side wall of the lid with each of the threads having an input point and an output point spaced with respect to each, and with respect to a horizontal plane extending perpendicularly through the axis, the container

including its threads and the lid including its threads being fabricated of generally rigid plastic.

3. A new and improved closure system of claim 2 wherein the rigid plastic is selected from the class of generally plastic rigid plastics including polyvinyl chloride, and polyethylene with a common thickness between about 0.010 inches and 0.100 inches, preferably about 0.080 inches, throughout the entire extent.

4. A new and improved closure system of claim 2 wherein each thread comprises a generally trapezoidal cross sectional configuration with its angled sides disposed one above the other and at an angle between about 15 degrees and 21 degrees, preferably about 18 degrees, from the plane.

5. A new and improved closure system of claim 2 wherein the input point of each thread end of the container is spaced immediately above the output end of the other thread and with each thread angled with respect to a horizontal plane extending perpendicularly through the axis.

6. A new and improved closure system of claim 2 wherein the first diameter is about 16.5 inches and the second diameter is about 19.5 inches.

7. A new and improved closure system of claim 2 wherein the upper extent of the container extends downwardly from the top for about 3 inches.

8. A new and improved closure system of claim 2 wherein

the side wall of the lid extends downwardly from the periphery  
for about 3 inches.